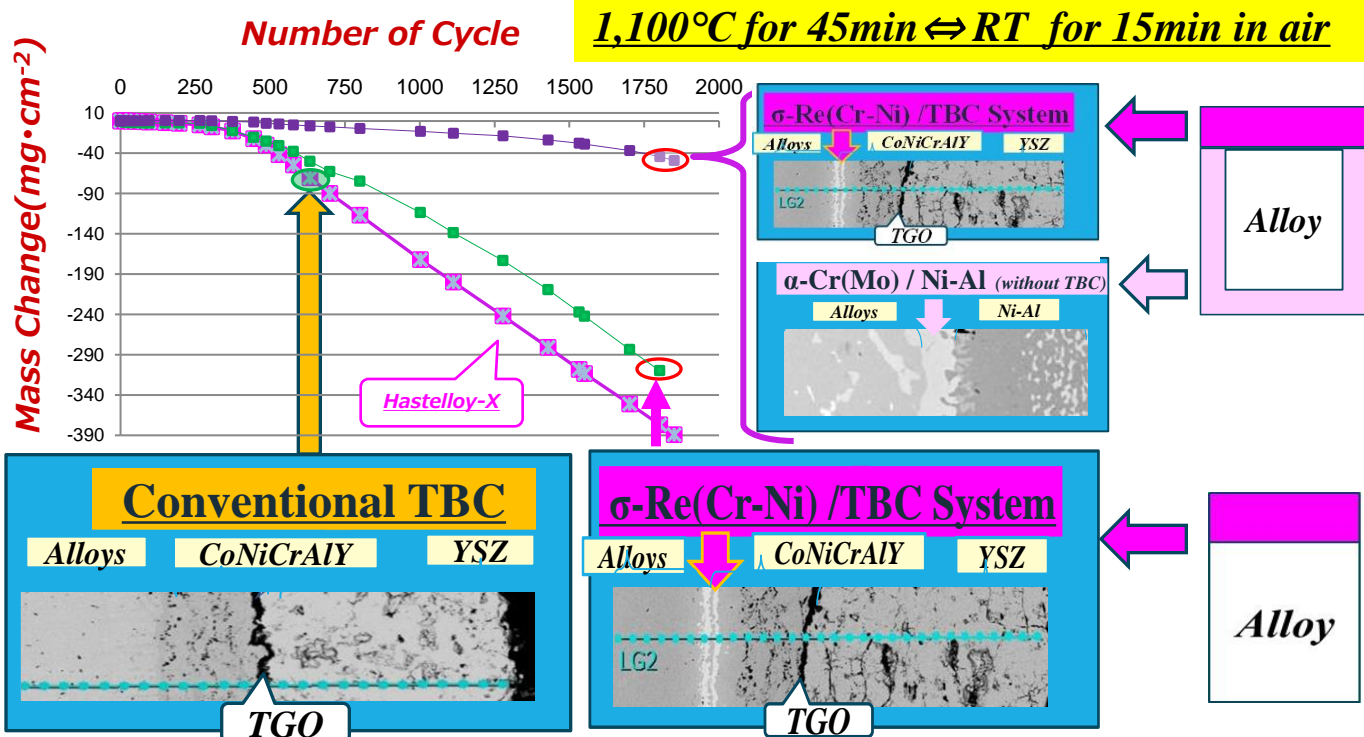


# Gas Turbines and Jet Engines

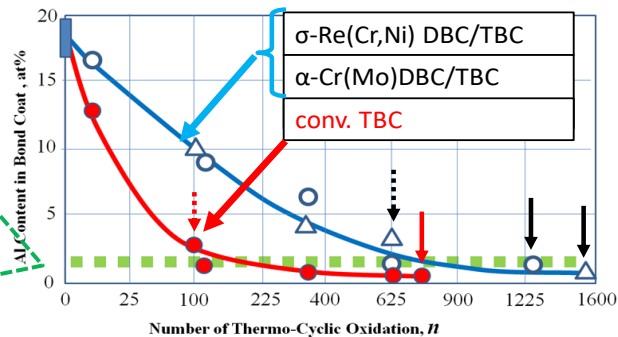


## Anti-spallation of YSZ of TBC with and without DBC



### Exfoliation of YSZ

- $\Rightarrow$  Exfoliation of YSZ of TBC and TBC/DBC were 650 and 1800 cycles.
- $\Rightarrow$  Spallation of YSZ occurred through TGO at several Al at% in CoNiCrAlY, where  $\text{Al}_2\text{O}_3$  changed to  $\text{Cr}_2\text{O}_3 + \text{Al}_2\text{O}_3$
- $\Rightarrow$   $\sigma\text{-Re}(\text{Cr,Ni})$  acts as a diffusion barrier



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